

1. A [thallium-free ceramic] metal halide lamp of different wattage having superior dimming characteristics, said lamp comprising:

a discharge vessel formed of a material resistant to sodium at high temperature;

a [thallium-free] fill including mercury and metal halides in said vessel including at least one member selected from the group consisting of  $MgI_2$  or  $MgBr_2$ ; and

discharge electrodes positioned at opposite ends within the discharge vessel; and

an envelope surrounding the discharge vessel. [, the outer jacket is filled with nitrogen].

[2. The lamp according to claim 1 wherein said fill gas nitrogen is at a pressure between about 350 and 600 mmHg.]

3. A lamp as claimed in claim 1 further comprising [characterized in that the ionizable filling comprises] Hg and Ar or Xe, halides of Na and at least one of the elements of Dy, Ho, Tm and wherein the  $MgI_2$  or  $MgBr_2$  or both are in a molar quantity between about 5 and 50% of the total molar quantity of the total halides.

4. A lamp as claimed in claim 1 wherein the halides are Na, Dy, Ho and Tm and wherein the total molar quantity of halides of Na, Dy, Ho and Tm is between about 50 and 95%, and wherein such halides are in the form of iodides or bromides.

5. A lamp as claimed in claim [2] 1 in which the molar quantity of Dy halide is between about 0 to 20%.

6. A [ceramic] metal halide lamp of different wattage having superior dimming characteristics, said lamp comprising:

a discharge vessel formed of a material resistant to sodium at high temperature;

a fill in said vessel including at least one member selected from the group consisting of  $MgI_2$  and/or  $MgBr_2$  and an ionizable filling comprising Hg and Ar or Xe, halides of Na and at least one of the halides of Dy, Ho, Tm and wherein the  $MgI_2$  is in a molar quantity between about 5 and 50% of the total molar quantity of the total halides; and

discharge electrodes positioned at opposite ends within the discharge vessel; and

an envelope surrounding the discharge vessel. [, the outer jacket is filled with nitrogen].

7. A [thallium-free ceramic] metal halide lamp of different wattage having superior dimming characteristics, said lamp comprising:

a discharge vessel formed of polycrystalline alumina [temperature];

an ionizable filling consisting essentially of Hg and Ar or Xe, halides of Na and at least one of the elements of Dy, Tm and Ho plus at least one member selected from the group consisting of  $MgI_2$  and  $MgBr_2$  in a molar quantity between about 5 and 50% of the total molar quantity of the total halides in said vessel including  $MgI_2$  and/or  $MgBr_2$ ; and

discharge electrodes positioned at opposite ends within the discharge vessel; and

an envelope surrounding the discharge vessel. [, the outer jacket is filled with nitrogen].

8. The lamp according to claim 1 wherein said envelope contains a [said nitrogen] fill gas [is] at a pressure between about 350 and 600 mmHg.

9. A dimmable metal halide lamp comprising:

a discharge vessel;

discharge electrodes positioned at opposite ends within the discharge vessel, and

an ionizable fill including at least one metal halide,  
MgI<sub>2</sub> or MgBr<sub>2</sub>.

5           10. A metal halide lamp comprising:  
          a discharge vessel;  
          discharge electrodes positioned at opposite ends within  
the discharge vessel; and  
          a fill consisting essentially of mercury, MgI<sub>2</sub> or MgBr<sub>2</sub>,  
          wherein said fill is substantially thallium-free.

10           11. A metal halide lamp comprising:  
          a discharge vessel;  
          discharge electrodes positioned at opposite ends within  
the discharge vessel;  
15           a fill including mercury and at least one metal halide,  
said metal halide including MgI<sub>2</sub> or MgBr<sub>2</sub>; and  
          an envelope surrounding the discharge vessel.

20           12. A metal halide lamp comprising:  
          a discharge vessel;  
          discharge electrodes positioned at opposite ends within  
the discharge vessel;  
          a ionizable fill substantially free of thallium and  
including at least one metal halide in said vessel comprising  
25           MgI<sub>2</sub> or MgBr<sub>2</sub>;  
          an envelope surrounding the discharge vessel.

30           13. A metal halide lamp comprising:  
          a discharge vessel formed of a material resistant to  
sodium at high temperature;  
          discharge electrodes positioned at opposite ends within  
the discharge vessel;  
          a fill including mercury and at least one metal halide in  
said vessel, said metal halide comprising MgI<sub>2</sub> or MgBr<sub>2</sub>,  
35           wherein said fill is substantially free of thallium;

and an envelope surrounding the discharge vessel.